**REMARKS**

Reconsideration of this application, in view of the foregoing amendments and the following remarks, is respectfully requested.

### Response to Arguments

1.      Applicant's arguments filed 2/17/06 have been fully considered but they are not persuasive. Regarding claims 23 and 27, Applicant traverses the rejection on the grounds that Benelli states that the coder is designed to ensure that information on each channel differs from each other, citing a portion of the article on page 1530, in the third paragraph under the Introduction in support of that statement, and further states that, in contrast, claims 23 and 27 recite reproducing a symbol or FEC block represented by a segment of an input data stream a pre-selected number of times, which is patentably distinguishable from Benelli. However, the portion of the Benelli article actually relied upon in the previous Office action corresponds with Figure 1, which is an example of the general structure of a classical diversity scheme. That is, Figure 1 does not make use of both coders C and Cl which are used to provide the "different" coded information on each channel as is done in the system shown in Figure 2. Rather, the classical diversity scheme is described as follows: "One trait common to all of the diversity schemes is that the same message is transmitted over m > 2 different channels or time intervals. Thereafter, the signals received from the m channels are combined in the receiver so that the overall error probability may be reduced. A typical example of a diversity communication system is schematically illustrated in Fig. 1." (page 1530, left hand column, second paragraph under Introduction). Therefore, the figure actually relied upon in the rejection clearly shows that the same message is transmitted over all the channels, and thus the claims are not patentably distinguishable over Benelli in combination with Kaewell.

Regarding claims 24 and 28, Applicant argues the references do not disclose the soft-combining as claimed. In response, it is noted that based on the language of the

claim, at minimum, the claimed soft-combining requires only <u>one of</u> mean squared estimation, identification of burst noise within a data packet, weighted combining, and selective combining to be present in a reference to meet the claimed limitation of soft-combining. The claim language is interpreted as a form of an alternative limitation (see MPEP 2173.05(h)), and does not require that all of the limitations be present in an anticipating reference. Kaewell, Jr. is considered to teach diversity combining using a maximal ratio combiner, which is a type of weighted combining. Kaewell also teaches a switching combiner which performs selective combining, but as noted above, only one of the types of soft-combining is required. Accordingly, Benelli in combination with Kaewell is considered to meet the limitations of claims 24 and 28.

Regarding claims 25 and 29, Applicant argues that Lathrop does not teach the limitations of claims 25 and 29. The Examiner respectfully disagrees, as Lathrop disclose using a channel for retransmission, and accordingly, Lathrop in combination with Benelli and Kaewell is considered to teach the limitations of claims 25 and 29.

The rejection of claims 23-30 is maintained, and is restated below.

### Claim Rejections - 35 USC § 103

2.     The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.     Claims 23, 24, 27 and 28 are rejected under 35 U.S.C. 103(a) as being

unpatentable over the publication by Benelli entitled "Two new coding techniques for

diversity communications systems" in view of Kaewell, Jr. et al. U.S. Patent 5,402,451.

Regarding claims 23 and 27, Benelli disclose a diversity system in Figure 1 (p. 1531) comprising a 1:N rate encoder (coder) coupled to an input data stream configured

to reproduce a symbol N times, a transmission arrangement configured to use a plurality of outputs to transmit each symbol using a distinct channel (channels 1-m), and a receiver coupled to the outputs of the transmission arrangement for combining the signals via a signal combiner to output an estimate of the symbol.

Benelli does not expressly state the signal combiner uses soft-combining of the signals.

Kaewell, Jr. et al. disclose a diversity combiner system where soft-combining of the signals is performed, as in a maximal ratio combiner (see abstract).

It would have been obvious to one of ordinary skill in the art to use the soft-combining of signals as taught by Kaewell, Jr. et al. in the combiner of Benelli because such combining allows for the best set of diversity combining weights to be determined for different operating environments (col. 1, lines 51-53).

Regarding claims 24 and 28, Benelli discloses that the soft-combining includes weighted combining (col., 1, lines 51-53; col. 2, lines 52-56).

4.      Claims 25 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benelli in view of Kaewell, Jr. et al. as applied to claims 23 and 27 above, and further in view of Lathrop U.S. Patent 5,701,427.

Regarding claims 25 and 29, Benelli in combination with Kaewell, Jr. et al. disclose a communication arrangement as described above, but do not expressly disclose transmitting an original message using one of the channels and performing retransmission using a remaining channel.

Lathrop discloses a communication arrangement where an information message is transmitted over a channel on a communications link 12, and a second retransmit channel is used to transmit retransmission information (col. 7, lines 22-33).

It would have been obvious to one of ordinary skill in the art to use the teaching of Lathrop of a channel for retransmission that is separate from that used to transmit an

original message in order to allow for retransmission of data not accurately received without interrupting the transmission of the original message.

5.    Claims 26 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benelli in view of Kaewell, Jr. et al. as applied to claims 23 and 27 above, and further in view of Lin et al. U.S. Patent 5,703,911.

Regarding claims 26 and 30, Benelli in combination with Kaewell, Jr. et al. disclose a communication arrangement as described above, but do not expressly disclose that the transmission channels are used to transmit information bits using a delay-encoded mapping scheme.

Lin et al. disclose a delay-encoded mapping scheme in Fig. 2 where a plurality of bits are used to represent a transmitted symbol.

It would have been obvious to one of ordinary skill in the art to use the delay encoded scheme of Lin et al. in the system of Decker et al. because such coding allows for increased transmission reliability (col. 1, lines 5-19, line 64 to col. 2, line 12).

Applicant believes this application and the claims herein to be in a condition for allowance.  Please charge any additional fees, or credit overpayment to Deposit Account No. 20-0668.  Should the Examiner have further inquiry concerning these matters, please contact the below named attorney for Applicant.

Respectfully submitted,
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